

WHAT IS CLAIMED IS:

1. An intelligent label comprising:  
a radio frequency transponder coupled to a fingerprint sensor system; and  
a substrate, said radio frequency transponder and said fingerprint sensor system being attached to said substrate.
2. The label of claim 1, wherein said radio frequency transponder comprises at least one antenna and at least one integrated circuit chip.
3. The label of claim 1, wherein said fingerprint sensor system comprises at least one processor.
4. The label of claim 1, wherein said fingerprint sensor system comprises at least one integrated circuit chip.
5. The label of claim 1, wherein said radio frequency transponder includes a memory for storing data.
6. The label of claim 1, wherein said fingerprint sensor system includes a memory for storing data.
7. The label of claim 1, further comprising at least one memory chip coupled to at least one of said radio frequency transponder and fingerprint sensor system.
8. The label of claim 1, further comprising a computer connected to at least one of said radio frequency transponder and said fingerprint sensor system.

9. The label of claim 1, further comprising a power source connected to at least one of said radio frequency transponder and said fingerprint sensor system.
10. The label of claim 9, wherein said power source comprises a printed battery.
11. The label of claim 1, wherein said radio frequency transponder and said fingerprint sensor system are embedded in said substrate.
12. The label of claim, 11, wherein said fingerprints sensor system is provided to read a fingerprint through the substrate.
13. The label of claim 1, wherein said radio frequency transponder is embedded in said substrate and a portion of said fingerprint sensor system is embedded in said substrate.
14. The label of claim 13, wherein the substrate has a hole to permit a finger to contact the fingerprint sensor.
15. The label of claim 1, wherein said substrate is at least part of one of a label, a badge, a package, a container, an envelope, a box, a piece of cardboard and a piece of paper.
16. The label of claim 1, wherein said substrate is made from at least one of paper, synthetic paper, plastic, metal, cloth and glass.

17. The label of claim 1, wherein said substrate is a label, said label comprising a front side and a back side, said back side being provided with adhesive.

18. The label of claim 1, wherein said intelligent label is dimensioned to fit into a standard 4.125 inch by 9.5 inch U.S. mail envelope.

19. The label of claim 1, further comprising at least one power source shared by said radio frequency transponder and said fingerprint sensor system.

20. The label of claim 19, wherein said power source comprises a printed battery.

21. The label of claim 1, further comprising a memory for storing data, said memory being shared by said radio frequency transponder and said fingerprint sensor system.

22. The label of claim 1, wherein said radio frequency transponder and said fingerprint sensor system share a common processor.

23. The label of claim 1, wherein filler material is provided around said radio frequency transponder and said fingerprint sensor system to provide a label of uniform thickness.

24. The label of claim 1, wherein filler material is provided around said radio frequency transponder and said fingerprint sensor system to provide a label of uniform thickness in the areas where the substrate covers both

sides of the radio frequency transponder the areas where the filler material is provided.

25. The label of claim 1, further comprising a power source connected to said radio frequency transponder and a separate power source connected to said fingerprint sensor system.

26. The label of claim 1, wherein said radio frequency transponder and said fingerprint sensor system are powered by radio waves received by the transponder.

27. An intelligent label comprising:

a radio frequency transponder coupled to a fingerprint sensor system; and

a substrate, said substrate comprising a liner and a face stock, wherein said radio frequency transponder and a portion of said fingerprint sensor system are positioned between said liner and said face stock, said liner being secured to said face stock.

28. The label of claim 27, wherein all of said fingerprint sensor is positioned between said liner and said face stock.

29. An intelligent label comprising:

a radio frequency transponder coupled to a fingerprint sensor system; and

a substrate, said substrate comprising a liner and a face stock, wherein said radio frequency transponder and a portion of said fingerprint sensing system is positioned between said liner and said face stock, said

liner or said face stock being secured to at least one of said radio frequency transponder and said fingerprint sensor system.

30. The label of claim 29, wherein all of said fingerprint sensor is positioned between said liner and said face stock.

31. The label of claim 29, wherein said liner and said face stock are secured to at least one of said radio frequency transponder and said fingerprint sensor system.

32. A method of making an intelligent label, comprising the steps of:  
obtaining a radio frequency transponder coupled to a fingerprint sensor system; and  
attaching said radio frequency transponder and said fingerprint sensor system to a substrate.

33. The method of making an intelligent label of claim 32, wherein said radio frequency transponder comprises at least one antenna and at least one integrated circuit chip.

34. The method of making an intelligent label of claim 32, wherein said fingerprint sensor system comprises at least one processor.

35. The method of making an intelligent label of claim 32, wherein said attaching step comprises embedding said radio frequency transponder and at least a portion of said fingerprint sensor system in said substrate.

36. A method of making an intelligent label, comprising the steps of:

obtaining a substrate comprising a pressure sensitive face stock and a release liner;

delaminating said substrate by peeling off said release liner to expose an adhesive on said pressure sensitive face stock;

obtaining a continuous web comprising radio frequency transponders coupled to fingerprint sensor systems;

cutting said web to produce web cuttings, each web cutting comprising at least one radio frequency transponder coupled to at least one fingerprint sensor system;

transferring a web cutting to the adhesive exposed on said pressure sensitive face stock of said substrate; and

relaminating said release liner onto said pressure sensitive face stock to cover said web cutting in the area around at least a portion of the fingerprint sensor system.

37. A method of making an intelligent label, comprising the steps of:

obtaining a substrate comprising a pressure sensitive face stock and a release liner;

delaminating said substrate by peeling off said release liner to expose said pressure sensitive face stock;

pattern coating said pressure sensitive face stock with a hot melt adhesive;

obtaining a continuous web comprising radio frequency transponders coupled to fingerprint sensor systems;

cutting said web to produce web cuttings, each web cutting comprising at least one radio frequency transponder coupled to at least one fingerprint sensor system;

transferring a web cutting to said pressure sensitive face stock of said substrate; and

relaminating said release liner onto said pressure sensitive face stock to cover said web cutting in the area around at least a portion of the fingerprint sensor system.

38. A method of making an intelligent label, comprising the steps of:  
obtaining a non-pressure sensitive substrate;  
obtaining a laminate;

pattern coating said non-pressure sensitive substrate with an adhesive;

obtaining a continuous web comprising radio frequency transponders coupled to fingerprint sensor systems;

cutting said web to produce web cuttings, each web cutting comprising at least one radio frequency transponder coupled to at least one fingerprint sensor system;

transferring a web cutting to one of said laminate and said non-pressure sensitive substrate; and

pressing said non-pressure sensitive substrate onto said laminate to cover said web cutting in the area around at least a portion of the fingerprint sensor system.

39. The method of verifying access to an object, comprising:

obtaining an intelligent label comprising a radio frequency transponder coupled to a fingerprint sensor system, said radio frequency transponder and said fingerprint sensor system being attached to a substrate;

attaching or inserting said intelligent label to the object; and  
reading the fingerprint of a person accessing the object.

40. The method as defined in claim 39, wherein reading the fingerprint comprises obtaining information relating to a distinct pattern of the fingerprint.

41. The method as defined in claim 39, wherein reading the fingerprint comprises contacting the fingerprint sensor system with a human finger.

42. The method as defined in claim 39, further comprising comparing information relating to the read fingerprint to information stored in a memory of the label and indicating with an indicator on the label whether said information relating to said read fingerprint is the same as the information stored in said memory.

43. The method as defined in claim 39, further comprising recording information about the read fingerprint in a memory in the label.

44. The method as defined in claim 39, further comprising removing said label or a portion of said label from said object after reading the fingerprint and sending said removed label or said removed portion of said label to a records location.

45. The method as defined in claim 44, wherein the radio frequency transponder relays information relating to said recorded information about the read fingerprint to an electronic storage device.

46. The method as defined in claim 39, wherein the radio frequency transponder relays information relating to said recorded information about the read fingerprint to an electronic storage device.



47. The method as defined in claim 39, further comprising comparing information relating to the read fingerprint to stored information relating to a fingerprint and indicating whether said information relating to said read fingerprint is the same as the stored information relating to a fingerprint.

48. The method of tracking or identifying an object, comprising the steps of:

- obtaining an intelligent label comprising a radio frequency transponder coupled to a fingerprint sensor system and a global positioning system, said radio frequency transponder, said fingerprint sensor system and said global positioning system being attached to a substrate;

- attaching or inserting said intelligent label to the object to be tracked or identified;

- tracking or identifying said object to be tracked or identified;

- reading a fingerprint of a recipient with the fingerprint sensor system; and

- recording information about the recipient's fingerprint or verifying the identity of the recipient based on the fingerprint of the recipient.

49. The method as defined in claim 39, wherein the tracking step comprises:

- receiving signals from an appropriate number of GPS satellites;

- processing said signals into location data; and

- transmitting said location data.

50. The method as defined in claim 49, further comprising transmitting said data relating to said read fingerprint and said location data, wherein

an interrogation station receives said transmitted location data and said transmitted fingerprint data.

51. The method of verifying access to an object, comprising the steps of:

- obtaining an intelligent label comprising a radio frequency transponder coupled to a fingerprint sensor system, said radio frequency transponder and said fingerprint sensor system being attached to a substrate;

- attaching or inserting said intelligent label to the object to which access is to be verified; and

- verifying access to said object.

52. A method of tracking the location of a person, comprising:

- providing an intelligent card comprising a radio frequency transponder coupled to a fingerprint sensor system and a global positioning system, said radio frequency transponder, said fingerprint sensor system and said global positioning system being attached to a substrate;

- periodically measuring at least one of his or her fingerprints read by said fingerprint sensor system;

- receiving signals from an appropriate number of GPS satellites in close temporal proximity to the reading of said fingerprint;

- processing said received signals into location data;

- associating said fingerprint information with said location data; and

- transmitting or downloading said fingerprint information and said location data to a receiver.

53. An intelligent label comprising:

a radio frequency transponder coupled to a magnetic field sensing system; and

a substrate, said radio frequency transponder and said magnetic field sensing system being attached to said substrate.

54. The label of claim 53, wherein said radio frequency transponder comprises at least one antenna and at least one integrated circuit chip.

55. The label of claim 53, wherein said magnetic field sensing system comprises at least one processor.

56. The label of claim 53, wherein said magnetic field sensing system comprises at least one integrated circuit chip.

57. The label of claim 53, wherein said radio frequency transponder includes a memory for storing data.

58. The label of claim 53, wherein said magnetic field sensing system includes a memory for storing data.

59. The label of claim 53, further comprising at least one memory chip coupled to at least one of said radio frequency transponder and said magnetic field sensing system.

60. The label of claim 53, further comprising a computer connected to at least one of said radio frequency transponder and said magnetic field sensing system.

61. The label of claim 53, further comprising a power source connected to at least one of said radio frequency transponder and said magnetic field sensing system.

62. The label of claim 53, further comprising a power source connected to said radio frequency transponder and a separate power source connected to said magnetic field sensing system.

63. The label of claim 53, wherein said radio frequency transponder and said magnetic field sensing system are powered by radio waves received by the transponder.

64. The label of claim 61, wherein said power source comprises a printed battery.

65. The label of claim 53, wherein said radio frequency transponder and said magnetic field sensing system are embedded in said substrate.

66. The label of claim 53, wherein said substrate is at least part of one of a label, a badge, a package, a container, an envelope, a box, a piece of cardboard and a piece of paper.

67. The label of claim 53, wherein said substrate is made from at least one of paper, synthetic paper, plastic, metal, cloth and glass.

68. The label of claim 53, wherein said substrate is a label, said label comprising a front side and a back side, said back side being provided with adhesive.

69. The label of claim 53, wherein said intelligent label is dimensioned to fit into a standard 4.125 inch by 9.5 inch U.S. mail envelope.

70. The label of claim 53, further comprising at least one antenna shared by said radio frequency transponder and said magnetic field sensing system.

71. The label of claim 53, further comprising at least one power source shared by said radio frequency transponder and said magnetic field sensing system.

72. The label of claim 71, wherein said power source comprises a printed battery.

73. The label of claim 53, further comprising a memory for storing data, said memory being shared by said radio frequency transponder and said magnetic field sensing system.

74. The label of claim 53, wherein said radio frequency transponder and said magnetic field sensing system share a common processor.

75. The label of claim 53, wherein filler material is provided around said radio frequency transponder and said magnetic field system to provide a label of uniform thickness.

76. An intelligent label comprising:  
a radio frequency transponder coupled to a magnetic field sensing system; and

a substrate, said substrate comprising a liner and a face stock, wherein said radio frequency transponder and said magnetic field sensing system are positioned between said liner and said face stock, said liner being secured to said face stock.

77. An intelligent label comprising:

a radio frequency transponder coupled to a magnetic field sensing system; and

a substrate, said substrate comprising a liner and a face stock, wherein said radio frequency transponder and said magnetic field sensing system is positioned between said liner and said face stock, said liner or said face stock being secured to at least one of said radio frequency transponder and said magnetic field sensing system.

78. The label of claim 77, wherein said liner and said face stock is secured to at least one of said radio frequency transponder and said magnetic field sensing system.

79. A method of making an intelligent label, comprising the steps of:

obtaining a radio frequency transponder coupled to a magnetic field sensing system; and

attaching said radio frequency transponder and said magnetic field sensing system to a substrate.

80. The method of making an intelligent label of claim 79, wherein said radio frequency transponder comprises at least one antenna and at least one integrated circuit chip.

81. The method of making an intelligent label of claim 79, wherein said attaching step comprises embedding said radio frequency transponder and said magnetic field sensing system in said substrate.

82 A method of making an intelligent label, comprising the steps of:  
obtaining a substrate comprising a pressure sensitive face stock  
and a release liner;

delaminating said substrate by peeling off said release liner to  
expose an adhesive on said pressure sensitive face stock;

obtaining a continuous web comprising radio frequency  
transponders coupled to magnetic field sensing systems;

cutting said web to produce web cuttings, wherein each web  
cutting comprises at least one radio frequency transponder coupled to at  
least one magnetic field sensing system;

transferring a web cutting to the adhesive exposed on said  
pressure sensitive face stock of said substrate; and

relaminating said release liner onto said pressure sensitive face  
stock to cover said web cutting.

83. A method of making an intelligent label, comprising the steps of:  
obtaining a substrate comprising a pressure sensitive face stock  
and a release liner;

delaminating said substrate by peeling off said release liner to  
expose said pressure sensitive face stock;

pattern coating said pressure sensitive face stock with a hot melt  
adhesive;

obtaining a continuous web comprising radio frequency  
transponders coupled to magnetic field sensing systems;

cutting said web to produce web cuttings, each web cutting comprising at least one radio frequency transponder coupled to at least one magnetic field sensing systems;

transferring a web cutting to said pressure sensitive face stock of said substrate; and

relaminating said release liner onto said pressure sensitive face stock to cover said web cutting.

84. A method of making an intelligent label, comprising the steps of:

obtaining a non-pressure sensitive substrate;

obtaining a laminate;

pattern coating said non-pressure sensitive substrate with an adhesive;

obtaining a continuous web comprising radio frequency transponders coupled to magnetic field sensing systems;

cutting said web to produce web cuttings, each web cutting comprising at least one radio frequency transponder coupled to at least one magnetic field sensing systems;

transferring a web cutting to one of said laminate and said non-pressure sensitive substrate; and

pressing said non-pressure sensitive substrate onto said laminate to cover said web cutting.

85. The method of tracking or identifying an object, comprising the steps of:

obtaining an intelligent label comprising a radio frequency transponder coupled to a magnetic field sensing system, said radio frequency transponder and said magnetic field sensing system being attached to a substrate;



attaching or inserting said intelligent label to the object to be tracked or identified; and

tracking or identifying said object to be tracked or identified.

86. The method as defined in claim 85, wherein the tracking step comprises:

sensing a magnetic field;

processing said sensed magnetic field into location data; and

transmitting said location data.

87. The method as defined in claim 85, wherein the tracking step comprises:

sensing a magnetic field;

processing said sensed magnetic field into movement data; and

transmitting said movement data.

88. The method as defined in claim 86, wherein an interrogation station receives said transmitted location data.

89. The method as defined in claim 85, wherein the identifying step comprises transmitting an identification signal.

90. The method of tracking and identifying an object, comprising the steps of:

providing an intelligent label comprising a radio frequency transponder coupled to a magnetic field sensing system, said radio frequency transponder and said magnetic field sensing system being attached to a substrate;

attaching or inserting said intelligent label to the object to be tracked or identified; and  
tracking and identifying said object to be tracked and identified.

91. The label of claim 53, further comprising a global positioning system.

92. An intelligent label comprising:  
a radio frequency transponder coupled to a global positioning system; and  
a substrate, said radio frequency transponder and said global positioning system being attached to said substrate.

93. A method of making an intelligent label, comprising the steps of:  
obtaining a radio frequency transponder coupled to a global positioning system; and  
attaching said radio frequency transponder and said global positioning system to a substrate.

94. The method of tracking or identifying an object, comprising the steps of:  
obtaining an intelligent label comprising a radio frequency transponder coupled to a global positioning system, said radio frequency transponder and said global positioning system being attached to a substrate;  
attaching or inserting said intelligent label to the object to be tracked or identified; and  
tracking or identifying said object to be tracked or identified.

95. The method of tracking and identifying an object, comprising the steps of:

- obtaining an intelligent label comprising a radio frequency transponder coupled to a global positioning system, said radio frequency transponder and said global positioning system being attached to a substrate;

- attaching or inserting said intelligent label to the object to be tracked or identified; and

- tracking and identifying said object to be tracked and identified.

96. A method of making an intelligent label, comprising the steps of:

- obtaining a non-pressure sensitive substrate;

- obtaining a laminate;

- pattern coating said non-pressure sensitive substrate with an adhesive;

- obtaining a continuous web comprising radio frequency transponders coupled to global positioning systems;

- cutting said web to produce web cuttings, each web cutting comprising at least one radio frequency transponder coupled to at least one global positioning system;

- transferring a web cutting to one of said laminate and said non-pressure sensitive substrate; and

- pressing said non-pressure sensitive substrate onto said laminate to cover said web cutting.